

CLAIMS;

1. A common-rail injection system for a diesel engine constructed such that a branch hole communicated with a flow passage is formed in an axial circumferential wall portion of a main pipe rail having said flow passage within its axial core direction, and a branch connecting body is connected to said branch hole integrally with the main pipe rail or through a separate joint member, improvement which said main pipe rail is manufactured by transformation induced plastic type strength steel, and the main pipe rail is processed and residual austenite is then generated by heat treatment, and the processing hardening of an inner surface and compression residual stress are left by performing the reduction processing of stress concentration of said branch hole and a main pipe rail side flow passage crossing portion.

2. The common-rail injection system for the diesel engine according to claim 1, wherein an induced plastic transformation is generated on the inner surface by autofrettage processing, and the compression residual stress is left after the reduction processing of the stress concentration of said branch hole and the main pipe rail side flow passage crossing portion is performed.

3. A common-rail injection system for a diesel engine constructed such that a branch hole communicated with a flow passage is formed in an axial circumferential wall portion of a main pipe rail having said flow passage within its axial core direction, and a branch connecting body is connected to said branch hole integrally with the main pipe rail or through a separate joint member; improvement which said main pipe rail is manufactured by transformation induced plastic type strength steel, and residual austenite is generated in the main pipe rail by heat treatment, and the main pipe rail is then processed and the processing hardening of an inner surface and compression residual stress are left by performing the reduction processing of stress concentration of said branch hole and a main pipe rail side flow passage crossing portion.

4. The common-rail injection system for the diesel engine according to claim 3, wherein an induced plastic transformation is generated on the inner surface by autofrettage processing, and the compression residual stress is left after the reduction processing of the stress concentration of said branch hole and the main pipe rail side flow passage crossing portion is performed.